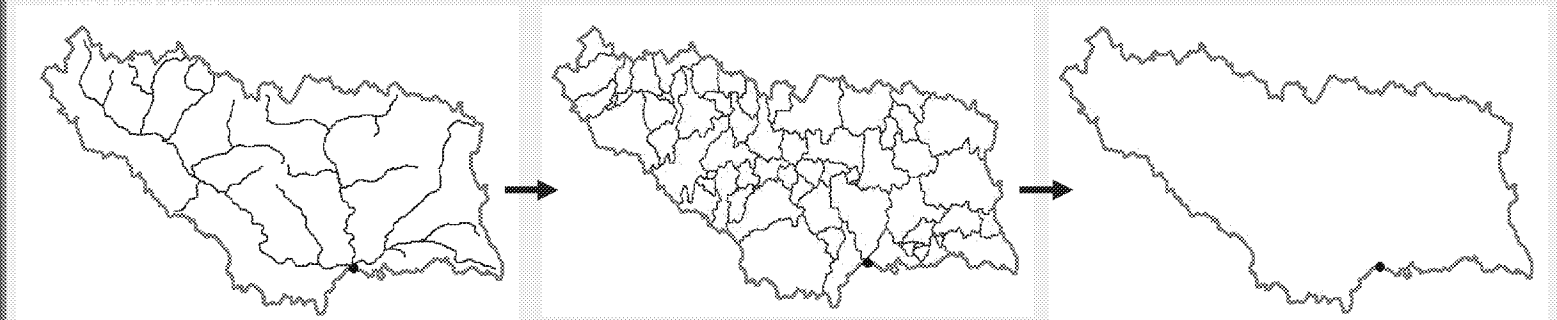
Office of Water GIS Analysis

- Identify communities in California with
  - Populations >1,000
  - Drinking water intakes with immediate drainage areas mostly in Forest Service lands
  - Highest Wildfire Hazard Potential and associated post-fire sediment erosion potential.
- Use GIS to combine key geospatial data in a common application
  - Post-wildfire sediment erosion potential
  - Wildfire Hazard Potential - relative potential for wildfire that would be difficult to contain
  - Drinking water intakes and associated source water protection areas
  - Land Ownership – e.g. Forest Service, BLM, tribal

Source Water Protection Areas (SPAs)

- Developed by EPA Office of Ground Water and Drinking Water
- NHDPlus used to identify catchments encountered by traveling 1 day upstream from surface drinking water intakes
  - Developed for > 8,330 intakes nationwide
    CA: 739 SPAs for stream and reservoir surface water

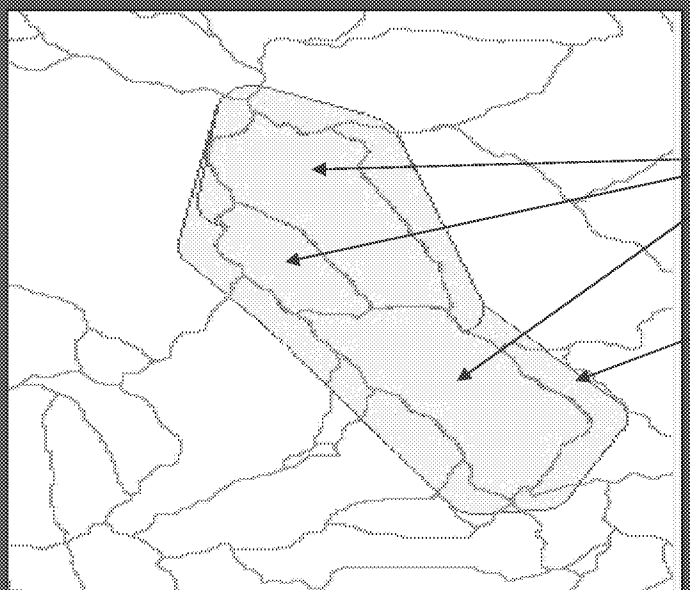


(1) Navigate 24 hours time of travel (TOT) upstream from georeferenced drinking water facility points along NHDPlus flowlines

(2) Identify NHDPlus catchments related to the 24 hour TOT flowlines

(3) Dissolve catchment boundaries to create 24 hour TOT SPA

SPA Images Shown are Generalized



- Catchments in actual SPA
- Generalized SPA perimeter shown in blue

Wildfire-Induced Erosion Potential: Data Sources

- Project initiated by EPA Office of Wetlands, Oceans and Watersheds to develop sediment erosion potential estimates from wildfires in the Western US
  - Work performed by Colorado State University with technical assistance from USDA Forest Service Labs in Moscow, ID and Missoula, MT
- GeoWEPP (Geographic Interface to the Water Erosion Prediction Project) Model adapted to provide hillslope-scale erosion estimates covering approximately 70% of the forested Western US
  - Hillslopes range from approximately 1 – 15 hectares
  - Over 736,000,000 hillslopes modeled
- Modeling results published in peer reviewed literature (Miller, ME; MacDonald, LH; Robichaud, PR; Elliot, WJ; International Journal of Wildland Fire 2011, 20, 982-999)

Predicting post-fire hillslope erosion in forest lands of the western United States